



2011 PMOC Annual Meeting

FEDERAL TRANSIT ADMINISTRATION

Dulles Corridor Metrorail Project

Use of Existing Foundations

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FTA Washington, DC Metropolitan Office



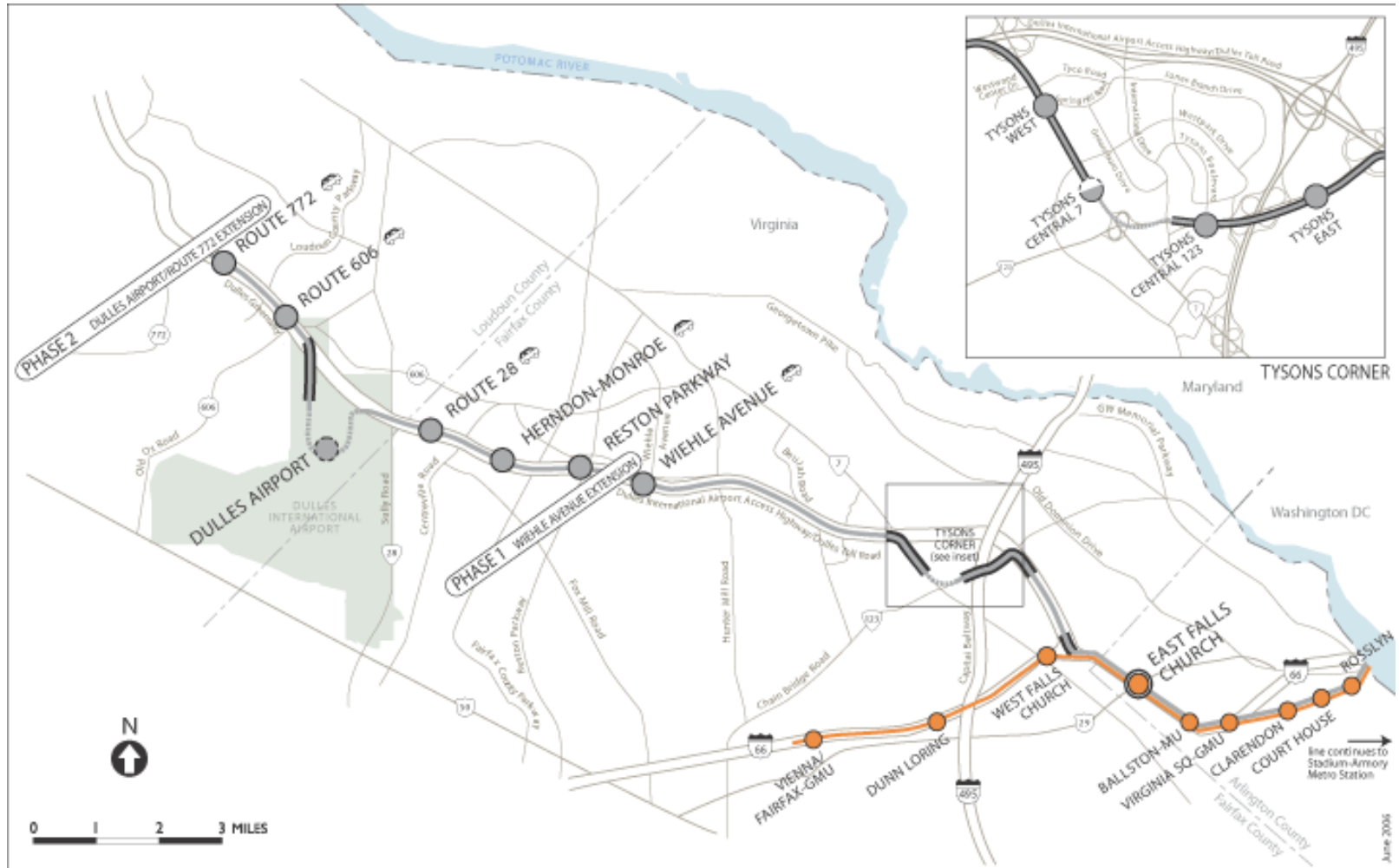
Dulles Corridor Metrorail Project

- Project Description
- Project Milestones
- Use of Existing Foundations
- OIG Involvement
- Testing Plan and Implementation
- Results
- Testing Oversight
- Observations

Dulles Corridor Metrorail Project

Project Description

- 11.7 miles new double-track
- 5 stations
- Improvements to existing rail yard
- 64 rail cars
- \$3.146 billion
 - \$900 million New Starts
 - \$75 million STP



June 2006

LEGEND

- | | | |
|--|---------------------------------|-------------------|
| Existing Orange Line Track and Station | New Station | Surface Track |
| Transfer Station | Partially Below Surface Station | Elevated Track |
| Parking | Underground Station | Underground Track |

www.dullesmetro.com
703.288.7000



Dulles Corridor Metrorail Project

Project Milestones

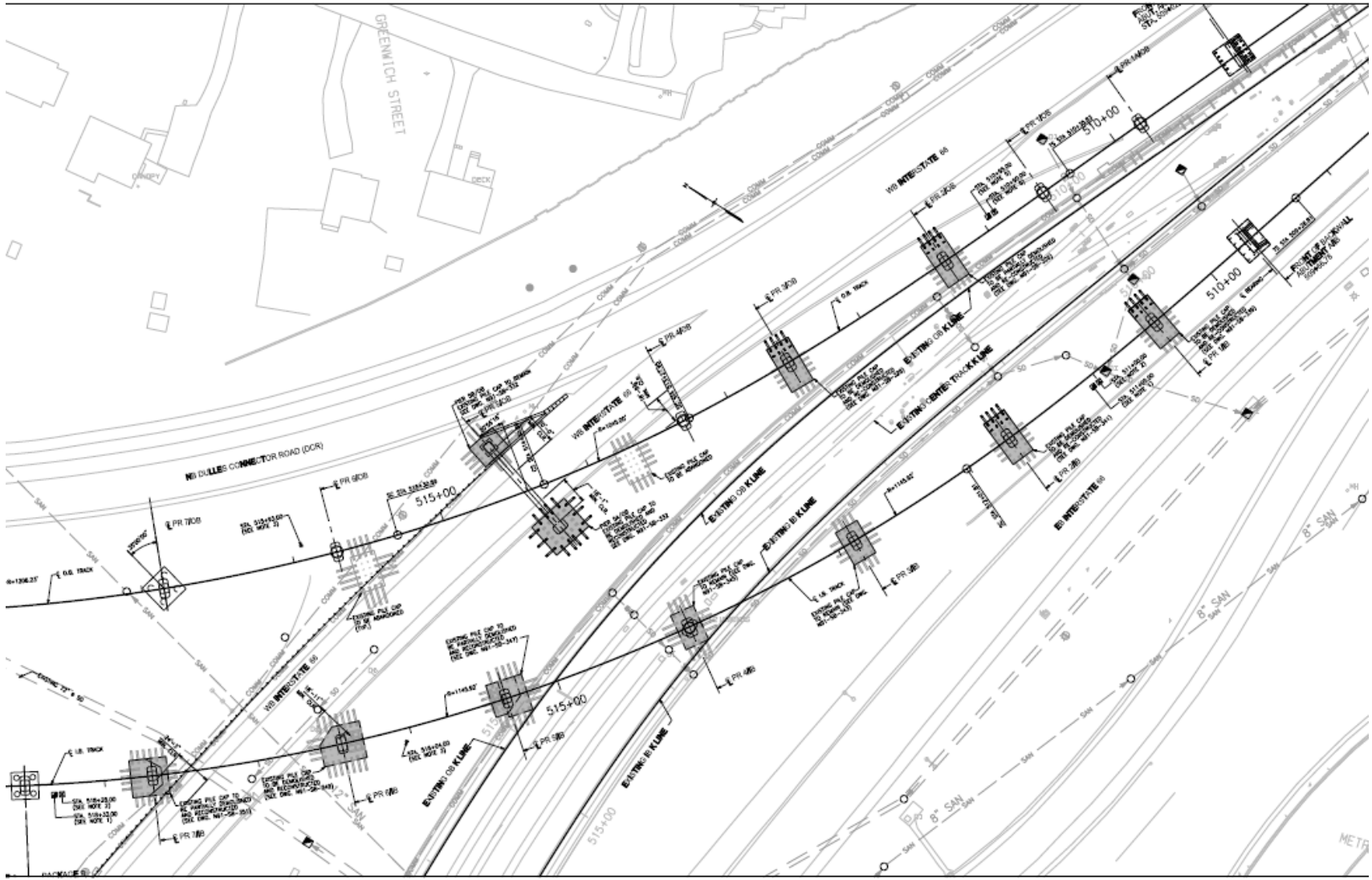
- PE Approved June 10, 2004
- FD Approved May 12, 2008
- FFGA Signed March 10, 2009
- D/B Contract Full NTP March 12, 2009
- ROD (FFGA) December 1, 2014

Dulles Corridor Metrorail Project

Use of Existing Foundations

- WMATA designed 13 foundation structures to support a future aerial guideway from median of proposed I-66 to the median of the proposed Dulles Connector Roadway.
- Construction of I-66 and WMATA K-Line (Orange Line) completed in 1982.
- I-66 opened in 1982; DCR in 1984; K-Line in 1986.
- DTP discovered foundations while doing soils borings during PE
- DTP modified design to incorporate 11 of 13 existing foundations

Attachment A - Existing Piers Location Plan



Dulles Corridor Metrorail Project

OIG Involvement

September 2008	OIG contacted by a “credible source” asserting insufficient testing on 11 pier foundations to be used to support elevated Dulles Corridor Metrorail guideway spanning I-66
November 5, 2008	OIG receives confidential complaint regarding integrity of piers and pilings
November 13, 2008	OIG informs FTA/TPB of complaint via memo requesting FTA to perform an inquiry into its allegations. Memo requests a response from FTA within 60 days
May 14, 2009	TPB forwards memo to DC Metro Office as “FYI”
May 14, 2009	DC Metro Office contacts MWAA to begin inquiry
May 19, 2009	MWAA provides initial response to FTA
June 30, 2009	FTA formally responds to OIG via memo from Robert Tuccillo. Memo conveys MWAA’s position on the integrity of piers and its testing protocol
July 28, 2009	OIG submits follow-up questions to FTA
July 28, 2009	FTA sends follow-up questions to WMATA

Dulles Corridor Metrorail Project

OIG Involvement

August 12, 2009	Dulles Transit Partners (DTP) provides info to PMOC
August 12, 2009	PMOC reviews DTP material and submits follow-up questions to DTP/MWAA
August 20, 2009	WMATA sends info to FTA
August 26, 2009	PMOC meeting with DTP/MWAA
September 14, 2009	PMO issues spot report on safety of 11 piers; recommends further testing
September 16, 2009	FTA submits PMOC report to OIG; OIG submits a follow-up question
September 17, 2009	FTA answers OIG question on proposed testing procedure
October 2, 2009	FTA/TRO-3 sends letter to MWAA Executive Project Director, regarding findings and recommendations from PMOC report
October 22, 2009	OIG issues Management Advisory to and notifies FTA of its intent to audit FTA's oversight of the project

Dulles Corridor Metrorail Project

Testing Plan and Implementation

- MWAA submits Test Plan outline to FTA December 2, 2009
- FTA concurs with MWAA Test Plan outline January 8, 2010
- MWAA approves DTP Test Plan February 12, 2010
- Testing begins April 2010
- Testing ends June 2010
- DTP Draft Report issued July 20, 2010
- DTP Final Report issued October 10, 2010
- CTI Report issued October 15, 2010
- MWAA QA Report issued October 15, 2010

Dulles Corridor Metrorail Project

Testing Plan and Implementation

4.0 TESTING AND INSPECTION OF EXISTING PILE FOUNDATIONS

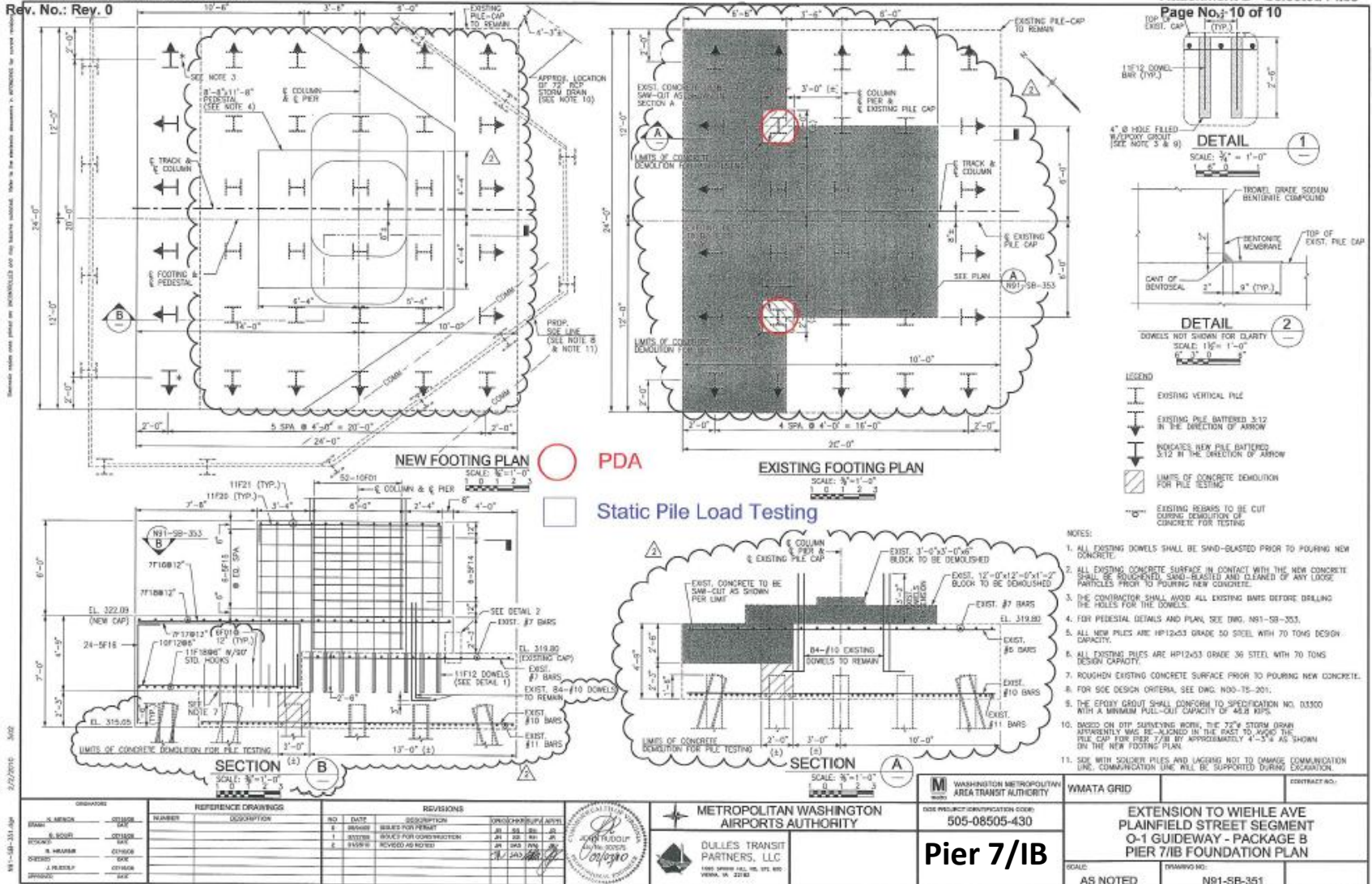
- 4.1 Dynamic Pile Testing
- 4.2 Static Load Testing
- 4.3 Soil Testing
- 4.4 Groundwater Testing
- 4.5 Corrosion Testing
- 4.6 H-Pile Continuity Testing
- 4.7 Stray Current Testing
- 4.8 Metallurgical Testing
- 4.9 Compressive Strength Testing of Concrete Core
- 4.10 Petrographic Analysis of Concrete Core
- 4.11 Tensile Strength of Rebar

Calc No.: 25235-000-K0C-G000-00008

Rev. No.: Rev. 0

Attachment B - Selected Piles

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○ PDA

□ Static Pile Load Testing

- LEGEND
- EXISTING VERTICAL PILE
 - EXISTING PILE BATTERED 3:12 IN THE DIRECTION OF ARROW
 - INDICATES NEW PILE BATTERED 3:12 IN THE DIRECTION OF ARROW
 - LIMITS OF CONCRETE DEMOLITION FOR PILE TESTING
 - EXISTING REBARS TO BE CUT DURING DEMOLITION OF CONCRETE FOR TESTING
- NOTES:
- ALL EXISTING DOWELS SHALL BE SAND-BLASTED PRIOR TO POURING NEW CONCRETE.
 - ALL EXISTING CONCRETE SURFACE IN CONTACT WITH THE NEW CONCRETE SHALL BE SAND-BLASTED AND CLEANED OF ANY LOOSE PARTICLES PRIOR TO POURING NEW CONCRETE.
 - THE CONTRACTOR SHALL AVOID ALL EXISTING BARS BEFORE DRILLING THE HOLES FOR THE DOWELS.
 - FOOT PEDESTAL DETAILS AND PLAN, SEE DWG. N81-SB-353.
 - ALL NEW PILCS ARE HP12x33 GRADE 50 STEEL WITH 70 TONS DESIGN CAPACITY.
 - ALL EXISTING PILCS ARE HP12x33 GRADE 36 STEEL WITH 70 TONS DESIGN CAPACITY.
 - ROUGHEN EXISTING CONCRETE SURFACE PRIOR TO POURING NEW CONCRETE.
 - FOR SOE DESIGN CRITERIA, SEE DWG. N80-15-201.
 - THE EPOXY GROUT SHALL CONFORM TO SPECIFICATION NO. 03300 WITH A MINIMUM PULL-OUT CAPACITY OF 45.8 KIPS.
 - BASED ON DTP SURVEYING WORK, THE 72" STORM DRAIN APPROPRIATELY WAS RE-LOCATED IN THE EAST TO ADJUST THE PILE CAP FROM PER 7/8 BY APPROXIMATELY 4'-5" AS SHOWN ON THE NEW FOOTING PLAN.
 - SEE WITH SOLIDER PILES AND LAGERS NOT TO DAMAGE COMMUNICATION LINE. COMMUNICATION LINE WILL BE SUPPORTED DURING EXCAVATION.

2/2/2015 3:02 N81-SB-351.dwg

ORIGINATOR	NUMBER	DESCRIPTION	NO.	DATE	DESCRIPTION	APPROVED BY
DESIGN	0242		1	08/08/09	ISSUED FOR PERMIT	AL
DESIGN	0242		2	08/10/09	REVISED FOR CONSTRUCTION	AL
DESIGN	0242		3	08/10/09	REVISED AS NOTED	AL

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METROPOLITAN WASHINGTON AIRPORTS AUTHORITY
DULLES TRANSIT PARTNERS, LLC
1400 SMITH LEE BL. #10, 970 FALLS CH. STATION, VA 22188

WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY
ONE METRO CENTER
505-08505-430
Pier 7/IB

WMATA GRID	EXTENSION TO WIEHLE AVE PLAINFIELD STREET SEGMENT Q-1 GUIDEWAY - PACKAGE B PIER 7/IB FOUNDATION PLAN
SCALE: AS NOTED	DRAWING NO.: N81-SB-351



Pier 7/1B

04/13/2010 13:44

Dulles Corridor Metrorail Project

Results

5.0 RESULTS OF TESTING AND INSPECTION

- 5.1 Pier 1/IB
- 5.2 Pier 2/IB
- 5.3 Pier 3/IB
- 5.4 Pier 4/IB
- 5.5 Pier 5/IB
- 5.6 Pier 6/IB
- 5.7 Pier 7/IB
- 5.8 Pier 2/OB
- 5.9 Pier 3/OB
- 5.10 Pier 5A/OB
- 5.11 Pier 5B/OB
- 5.12 Tensile Strength Test of Rebar

Dulles Corridor Metrorail Project

Results

- “All field and laboratory testing results indicate compliance with all requirements”.
- FTA still awaiting final sign off and notification of acceptance from MWAA
- Design and Construction of piers using existing foundations complete

Dulles Corridor Metrorail Project

Testing Oversight

- MWAA Contractor CTI observed tests, reviewed DTP report, and issued report
- MWAA QA Staff observed test and reviewed DTP and CTI reports
- PMOC Full Time Staff Observed all tests and reviewed DTP and CTI reports







Dulles Corridor Metrorail Project

Observations

- Internal Issues at FTA delayed addressing OIG Hotline Complaint from November 2008 to May 2009
- Only documentation available were a Soils Investigation Report and original Design Drawings--not As-Builts--for WMATA's I-66/DCR foundations
- Even WMATA staff was only aware of one foundation when doing Alternatives Analysis and environmental work because partial pier was built above ground
- OIG lacked full understanding of FTA and PMOC roles; they mistakenly believe we do Project Management, not Project Management **Oversight**

Dulles Corridor Metrorail Project

Observations

- FTA stills needs to clearly define the agency's role as it pertains to **oversight** of major capital projects
- This will also shape the role of the PMOC in various areas, including design review
- We then need to educate the OIG leadership and staff so that they will have a realistic picture of our role in oversight

Questions/Comments